

NEW DESCRIPTIONS

A NEW SPECIES OF THE GENUS *ERGASILUS* NORDMANN, 1832 (COPEPODA: POECILOSTOMATOIDA) FROM KERALA¹

SHAJU THOMAS²

(With twelve text - figures)

Ergasilus vembanadensis sp.nov. collected from the gills of *Wallago attu* (Bloch & Schneider) is described and illustrated.

INTRODUCTION

The family Ergasilidae has more than 100 species, which parasitise mainly freshwater and marine teleost fishes (Kabata 1979). Adult females of the genus *Ergasilus* are usually attached to the body surface or on the gills of the fishes whereas males remain free-swimming throughout their life. In the oriental region this genus has not been studied in detail (Fernando and Hanek 1973). Karamchandani (1952) had given a key to the seven species of *Ergasilus* described from Indian waters. A new species is described here.

Ergasilus vembanadensis sp. nov.

MATERIAL: Twenty females were collected from the gills of *Wallago attu* caught from the Vembanad lake, Kerala. The holotype female will be deposited in the Indian Museum, Calcutta, India.

FEMALE (Fig. 1): Cephalothorax is longer than wide and subtriangular. Cephalic fusion with the first thoracic segment is marked by a dorsal groove. Cephalon broader at the region of fusion and provided with a pair of distinct dorso-lateral setules. Second to fifth leg-bearing segments gradually diminishing in size posteriorly. Genital segment is barrel-shaped with several rows of fine spinules ventrally. Abdomen three-segmented, each segment bearing a row of fine

spinules ventrally near the anterior margin (Fig. 12). Uropod squarish with a long medial seta.

First antenna (Fig. 2) is six-segmented, basal segment broader than long, second segment stout and thick, succeeding segments decreasing in size and each segment bears numerous simple setae of varying length. Second antenna (Fig. 3) is four-segmented, basal segment is short and stout, second segment longer than the first with a sensillum on the distal half of the medial margin, third segment slender and curved. Distal segment is a sharp and strong claw. Mandible (Fig. 4) is indistinctly two-segmented. Basal segment is massive, the mandibular palp, with hairs on its inner margin, is present at the distal end. The distal segment bears a papilla, from which arises a terminal spine beset with hairs. Posterior to the spine a large falciform blade is present which is ventrally fringed with hairs. The base of the distal segment has an elongated spine with fine hairs. First maxilla (Fig. 5) is round in shape, armed with two long subequal setae. Second maxilla (Fig. 6) is two segmented, basal segment broad and thick, distal segment is thickly packed with denticles. Maxilliped is absent.

First to fourth thoracic appendages are biramous and have two-segmented sympod. Coxa is devoid of ornamentation while basis has a plumose seta on the lateral margin and fine spinules on the distal inner margin. All setae on the appendages are plumose. First leg (Fig. 7): exopod is three-segmented, basal segment longer than broad with a

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² Department of Zoology, Nirmal College, Mavattupuzha, Kerala - 686 661.

distal spine, the spine and the distal outer margin of the segment are denticulated. Second segment is about half the length of the basal segment with a single seta on the inner margin and a row of denticles on outer margin. Terminal segment is small, bearing two spines with serrated flange and five setae. The inner margin of the first and second segments bear fine hairs. Endopod is three-segmented, basal segment longer than broad with denticles and fine hairs on the outer margin and bears an inner seta. Second segment is similar to the first segment. Distal segment carries two spines with denticular flange and four setae. The outer margin has a row of denticles and fine hairs.

Second leg (Fig. 8): exopod is three-segmented, basal segment long and stout with a distal spine and fine hairs on the inner margin. Second segment is shorter than the basal segment with fine serration on the outer margin. It bears a single seta and fine hairs on the inner margin. Terminal segment is comparatively short, having fine serration on the outer margin and six distal setae. First segment of endopod is long having a single seta. Second and third segments are almost equal in size, second segment with two inner setae and distal segment bears a strong spine and four setae. The outer margin of all the segments have a row of spinules between fine hairs.

Third leg (Fig. 9): exopod is three-segmented, basal segment is longer than the second and third combined together, bears a distal spine and fine hairs on the inner margin. Second segment is short, carries an inner seta and fine hairs on the inner margin. Third segment bears a spine and six setae. Endopod is three-segmented, segments decreasing in length distally. Basal segment with a single seta, second segment bears two setae and terminal segment has one strong spine and four setae. The outer margin of all the segments carry a row of spinules between the fine hairs.

Fourth leg (Fig. 10): exopod is two-segmented, basal segment long and stout with distal spine, second segment short, bears one spine and five setae distally. Endopod is three-segmented, segments subequal in length, first with a single seta, second with two setae and third carries one strong spine and three setae. The outer margins of all the segments carry fine hairs.

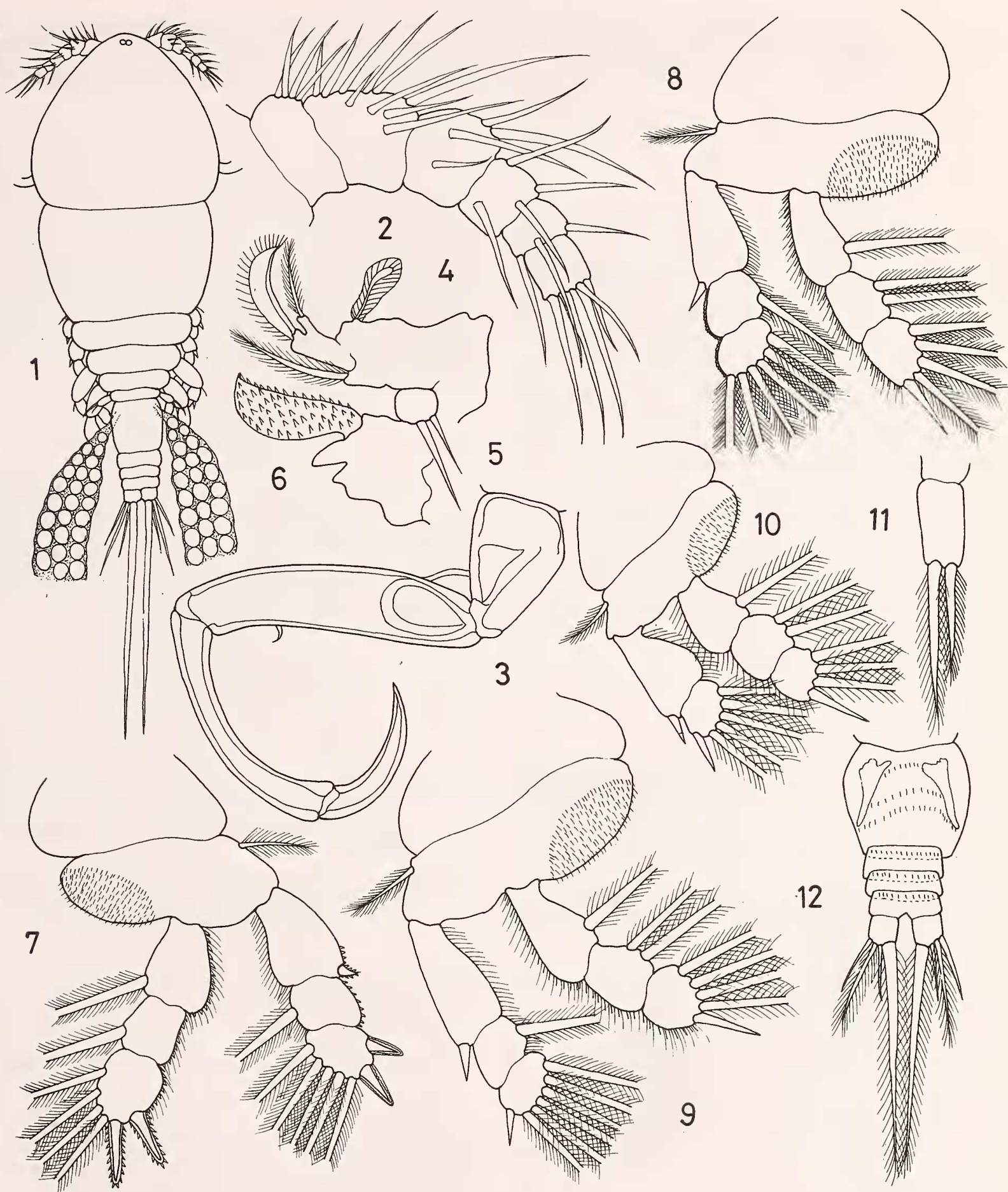
Fifth leg (Fig. 11): single segmented, longer than broad with two subequal distal setae.

Uropod (Fig. 12): squarish with an elongated medial seta and a short lateral seta between two spiniform setae. Total length: 0.8-0.9 mm.

MALE : Unknown.

This species has been named after the collection locality, Vembanad Lake.

Remarks: *Ergasilus vembanadensis* sp. nov. resembles *E. ceylonensis* Fernando and Hanek, in its general body shape. In both species, the cephalothorax is subtriangular and indented mid-dorsally. Genital segment is barrel-shaped and slightly wider than the fifth segment in both species. But *E. vembanadensis* differs in many respects from *E. ceylonensis*. In *E. vembanadensis* the caudal ramus is squarish whereas in *E. ceylonensis* it is slender and long. Though the first antenna is six-segmented in both species, in *E. ceylonensis* the first segment is long, contrary to the broad first segment of the present species. Second antenna also exhibits differences in both the species. Sensillum is absent on the second antenna in *E. ceylonensis*, whereas it is present on the second segment in the new species. Mouth parts and thoracic appendages of both these species are not similar. The exopod of fourth leg is three-segmented in *E. ceylonensis* whereas in *E. vembanadensis* it is two-segmented as in the case of several *Ergasilus* species.



Figs. 1 - 12. *Ergasilus vembanadensis* sp. nov.

1. Female ; 2. First antenna ; 3. Second antenna ; 4. Mandible ; 5. First maxilla ; 6. Second maxilla ; 7. First leg ; 8. Second leg ; 9. Third leg ; 10. Fourth leg ; 11. Fifth leg ; 12. Genital segment, abdomen and uropod.

Ergasilus scotti Sundara Raj (1923) and *Ergasilus bengalensis* Southwell and Prasad (1918) are other *Ergasilus* sp. reported from *Wallago attu* in Indian waters. Though the new species is from the same host, these species are quite different in morphology and structural details.

The cephalothorax of *E. scotti* is violin-shaped and in *E. bengalensis* it is more or less elliptical, Whereas in *E. vembanadensis*, the cephalothorax is subtriangular and indented. Sensillum is absent on the second antenna of *E. scotti* and *E. bengalensis* but it is present on the second segment of the second antenna of the new species. Mouth parts and thoracic appendages of *E. vembanadensis* are different in structural details from *E. scotti* and *E. bengalensis*. Uropod of *E. scotti* bears three long setae and *E. bengalensis* carries two setae whereas in the present species uropod is with an elongated medial seta in addition to a short lateral and two spiniform setae. The fifth leg in *E. scotti* is much reduced, papillae-

form with two spines and in *E. bengalensis*, it is knob like with single spine. But in *E. vembanadensis* fifth leg is longer than broad with two subequal distal setae.

E. vembanadensis sp. nov. can be distinguished from all other species of the genus by the presence of paired dorso-lateral cephalothoracic setules, denticulation of the second segment of second maxilla, sensillum on second antenna, ornamentation and armature of thoracic appendages, single segmented fifth leg with two setae, and the spiniform setae on the uropod.

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REFERENCES

- FERNANDO, C.H. & HANEK, GEORGE (1973): Two new species of the genus *Ergasilus* Nordmann, 1832 (Copepoda, Ergasilidae) from Ceylon. *Crustaceana* 25 (1): 13-20.
- KABATA, Z. (1979): Parasitic Copepoda of British fishes. The Ray Society, London, U.K. 667 pp.
- KARAMACHANDANI, S.J. (1952): A new species of *Ergasilus* from the gills of *Labeobata* (Hamilton). *Rec. Ind. Mus.* 50: 287-293.
- SOUTHWELL, T. & PRASAD, B. (1918): Notes from Bengal fisheries laboratory. No. 5. Parasites from Indian fishes with a note on the Carcinoma in the climbing perch. *Rec. Ind. Mus.* 15: 341-355.
- SUNDARA RAJ, B. (1923): A new copepod parasite from the gills of *Wallago attu*. *Madras Fish. Bull.* 17 (2) : 45-58.